Docket No.: 28111/32729E

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of: McCafferty et al.) Express Mail Label No.) EM 578 443 212 US
Continuation 1.53(b) of U.S. Serial No.: 08/484,893) Dated: November 3, 2000
Filed: herewith) I hereby certify that this paper (or fee) is being deposited with the United
For: "Methods For Producing Members Of Specific Binding Pairs	 States Postal Service "EXPRESS MAIL POST OFFICE TO ADDRESSEE" service under 37 CFR
Group Art Unit: to be assigned	§1.10 on the date indicated above and is addressed to the Commissioner for
Examiner: to be assigned	Patents, Box Patent Application, Washington, D.C., 20231.
	Richard Zimmermann

INFORMATION DISCLOSURE STATEMENT WITH FORM PTO-1449

Commissioner for Patents Washington, D.C. 20231

Dear Sir:

The Applicants request that the documents listed on the attached Form PTO-1449 be made of official record in the above-identified application and considered by the Examiner. The enclosed documents were disclosed in the text of the specification and are now being listed in PTO Form 1449 to ensure that a record is made that they have been considered. Pursuant to 37 C.F.R. §1.98(d), copies of documents A1-A16, B1-B17, C1-C119 are not enclosed because they were cited in one or more prior applications (U.S. Serial No. 09/417,479, filed October 13, 1999 and U.S. Serial No. 08/484,893, filed June 7, 1995 and U.S. Serial No. 07/971,857, filed January 8, 1993, now U.S. Patent No. 5,969,108 issued October 19, 1999) that is presently relied upon herein for an earlier filing

date. Reference A17, Breitling *et al.* U.S. Patent No. 5,985,588 issued November 16, 1999 is herewith enclosed in accordance with 37 C.F.R. §1.98(a)(2)(i). However, copies of these documents will be resubmitted at the Examiner's request.

This Information Disclosure Statement is not intended to be an admission that a search has been made, that other relevant art does not exist, or that any of the information disclosed herein constitutes prior art under 35 U.S.C. §102 or §103.

This Information Disclosure Statement is submitted before receipt of a first Office action on the merits, and consequently should be considered by the Patent Office without payment of a fee. See 37 C.F.R. §1.97(b). However, please charge any necessary fees due in connection with this Information Disclosure Statement to Deposit Account No. 13-2855. A copy of this paper is enclosed herewith.

MARSHALL, O'TOOLE, GERSTEIN, MURRAY & BORUN 6300 Sears Tower 233 South Wacker Drive Chicago, Illinois 60606-6402 (312) 474-6300

November 3, 2000

By:

Nabeela R. McMillian, Ph.D. Registration No.: 43,363

Agent for Applicants

Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 28111/32729E	Serial No. to be assigned	
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			U.S. PAT	TENT DOCUMENT	S		
*Examiner Initials		Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
	A1	4,593,002	06/03/86	Dulbecco	435	172.3	2
	A2	4,816,397	03/28/89	Boss et al.	435	68	0.0
-	A3	4,946,778	08/07/90	Ladner et al.	435	69.6	390
	A4	5,091,513	02/25/92	Huston et al.	530	387	60
	A5	5,223,409	06/29/93	Ladner et al.	435	69.7	
	A6	5,403,484	04/04/95	Ladner et al.	435	235.1	
	A7	5,427,908	06/27/95	Dower et al.	435	5	
	A8	5,658,727	08/19/97	Barbas et al.	435	6	
	A9	5,688,666	11/18/97	Bass et al.	435	69.4	
,	A10	5,750,373	05/12/98	Garrard et al.	435	69.4	
	A11	5,759,817	06/02/98	Barbas, C.	435	69.7	
	A12	5,770,356	06/23/98	Light et al.	435	5	
	A13	5,780,279	07/14/98	Matthews et al.	435	172.3	
	A14	5,821,047	10/13/98	Garrard et al.	435	5	
	A15	5,846,765	12/08/98	Matthew et al.	435	69.1	
	A16	5,849,500	12/15/98	Breitling et al.	435	Burgan an	
	A17	5.985,588	11/16/99	Breitling et al.	435	7.8	

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		FOR	EIGN PATE	NT DOCUM	MENTS			
*Examiner		Document	Publication	Country	Class	Subclass	ļ	nslation
Initials		Number	Date			 	Yes	No
	B1	WO 83/02393	07/21/83	WIPO		<u></u>		0
	B2	EP 2 137 631	10/10/84	EP			,	100
	В3	EP 0 168 933	01/22/86	EP			=	
-	B4	WO 88/06630	09/07/88	WIPO			9163	
	B5	WO 88/09344 .	12/01/88	WIPO			77	
	В6	EP 0 324 162 A1	12/24/88	EP				
	В7	AU-B-27617/88	07/06/89	AU				
	B8	WO 90/02809	03/22/90	WIPO				
	В9	WO 90/05144	05/17/90	WIPO				
	B10	WO 90/14424	11/29/90	WIPO				
	B11	WO 90/14430	11/29/90	WIPO				
	B12	WO 90/14443	11/29/90	WIPO				
	B13	WO 91/10737	07/25/91	WIPO				
	B14	WO 91/17271	11/14/91	WIPO				
	B15	WO 92/06204	04/16/92	WIPO				
	B16	WO 92/09690	06/11/92	WIPO				
	B17	WO 92/18619	10/29/92	WIPO				

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		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)
	C4	Amit, A.G. et al., "Three-Dimentional Structure of an Antigen-Antibody Complex at 2.8 Å Resolution," <i>Science</i> , 233:747-753 (August, 1986).
	C2	Armstrong, J. et al., "Domain Structure of Bacteriophage fd Adsorption Protein," FEB. Lett., 135(1):167-172 (November, 1981).
	C3	Bass et al., "Hormone Phage: An Enrichment Method for Variant Proteins With Altered Binding Properties," <i>Proteins: Structure, Function and Genetics</i> , 8:309-314 (1990).
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·	C5	Beck, E. et al., "Nucleotide sequence of bacteriophage fd DNA," Nucleic Acids Research, 5(12):4495-4503 (1978).
	C6	Berek, C. et al., "Molecular events during maturation of the immune response to oxazolone," Nature, 316:412-418 (August, 1985).
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	C12	Boyle, W., "An Extension of the ⁵¹ Cr-Release Assay for the Estimation of Mouse Cytotoxins," <i>Transplantation</i> , 6(6):761-764 (1968).
	C13	Branden, C. et al., in <i>Introduction to Protein Structure</i> , Garland Publishing, Inc., New York and London, pp.26-29 (1991).
	C14	Brenna, O. et al., "Affinity-Chromatography Purification of Alkaline Phosphatase from Calf Intestine," Biochem. J., 151:291-296 (1975).

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	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)
C15	Brownstone, A. et al., "Biological Studies with an Iodine-Containing Synthetic Immunological Determinant 4-Hydroxy-3-iodo-5-nitrophenylacetic Acid (NIP) and Related Compounds," <i>Immunology</i> , 10:481-492 (1966)
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C17	Carter, P. et al., "Improved oligonucleotide site-directed mutagenesis using M13 vectors" Nucl. Acids Res., 13(12):4431-4443 (1985).
C18	Casali, P. et al., "Human Monoclonals from Antigen-Specific Selection of B Lymphocytes and Transformation by EBV," Science, 234:476-479 (October, 1986).
C19	Chaidaroglou, A. et al., "Function of Arginine-166 in the Active Site of Escherichia collaboration Phosphatase," Biochemistry, 27:8338-8343 (1988).
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C22	Chiang, Y.L. et al., "Direct cDNA Cloning of the Rearranged Immunoglobulin Variable Region," BioTechniques, 7(4):360-366 (1989).
C23	Choo, Y. et al., "In vivo repression by a site-specific DNA-binding protein designed against an oncogenic sequence," Nature, 372:642-645 (1994).
C24	Choo, Y. et al., "Selection of DNA binding sites for zinc fingers using rationally randomized DNA reveals coded interactions," <i>Proc. Natl. Acad. Sci., USA, 91</i> :11168-11172 (1994).
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C26	Chothia, C. et al., "Canonical Structures for the Hypervariable Regions of Immunoglobulins," J. Mol. Biol., 196:901-917 (1987).

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C27	Chuchana, P. et al., "Definition of the human immunoglobulin variable lambda (IGLV) gene subgroups," Eur. J. Immunol., 20:1317-1325 (1990).
C28	Clackson, T. et al., "'Sticky feet'-directed mutagenesis and its application to swapping antibody domains," Nucl. Acids Res., 17(24):10163-10170 (1989).
C29	Cunningham, C. et al., "Antibody engineering - how to be human," Trends Biotechnology, 10(4):112-113 (April, 1992).
C30	Curti, B.D., "Physical Barriers to drug delivery in tumors," Critical Reviews in Oncology/Hematology, 14:29-39 (1993).
C31	Cwirla, S.E. et al., "Peptides on phage: A vast library of peptides for identifying ligands," Proc. Natl. Acad. Sci., USA, 87:6378-6382 (1990).
C32	De Bellis, D. et al., "Regulated expression of foreign genes fused to lac: control by glucose levels in growth medium," Nucl. Acids Res., 18(5):1311 (1980).
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C35	Dillman, R.O., "Monoclonal Antibodies for Treating Cancer," <i>Annals of Internal Medicine</i> , 111:592-603 (1989).
C36	Dower, W.J. et al., "High efficiency transformation of E. coli by high voltage electroporation," Nucl. Acids Res., 16(13):6127-6145 (1988).
C37	Eckert, K.A. et al., "High fidelity DNA synthesis by the <i>Thermus aquaticus</i> DNA polymerase," <i>Nucl. Acids Res.</i> , 18(13):3739-3744 (1990).
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C39	Evan, G.I. et al., "Isolation of Monoclonal Antibodies Specific for Human c-myc Proto-Oncogene Product," Mol. Cell. Biol., 5(12):3610-3616 (December, 1985).
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C4	Gherardi, E. et al., "A single-step procedure for cloning and selection of antibody-secreting hybridomas," J. Immunol. Methods, 126:61-68 (1990).
C4	Glockshuber, R. et al., "The Disulfide Bonds in Antibody Variable Domains: Effects or Stability, Folding in Vitro, and Functional Expression in Escherichia coli," Biochemistry, 31:1270-1279 (1992).
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C4	Gorick, B.D. et al., "Three Epitpoes on the Human Rh Antigen D Recognized by ¹²⁵ I-Labelled Human Monoclonal IgG Antibodies," Vox. Sang., 55:165-170 (1988).
C ²	Gottesman, M.E. et al., "Transcription Antitermination by Bacteriophage Lambda N Gene Product," J. Mol. Biol., 140:57-75 (1980).
C4	Grant, R.A. et al., "Structure of the Filamentous Bacteriophage f1," J. Biol. Chem., 256(1):539-546 (January, 1981).
C	Griffiths, G.M. et al., "Somatic mutation and the maturation of immune reponse to 2-phenyl oxazolone," <i>Nature</i> , 312:271-275 (1984).
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C	Harris, W.J. et al., "Therapeutic antibodies - the coming of age," Trends Biotechnology 11:42-44 (February, 1993).
C	Hird, V. et al., "Immunotherapy with Monoclonal Antibodies," in Genes and Cancer, Edited by D. Carney and K. Sikora, John Wiley & Sons, Ltd., pp.183-189 (1990).
C	Horton, R.M. <i>et al.</i> , "Engineering hybrid genes without the use of restriction enzymes: gene splicing by overlap extension," <i>Gene</i> , 77:61-68 (1989).

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		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)
	C54	Hughes-Jones, N.C. et al., "Nucleotide sequences and three-dimensional modelling of the V _H and V _L domains of two human monoclonal antibodies specific for the D antigen of the human Rh-blood-group system," <i>Biochem. J.</i> , 268:135-140 (1990).
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	C56	Huse et al., "Generation of a Large Combinatorial Library of the Immunoglobulin Repertoire in Phage Lambda," Science, 246:1275-1281 (1989).
	C57	Huston, J.S. et al., "Protein engineering of antibody binding sites: Recovery of specific activity in an anti-digoxin single-chain Fv analogue produced in <i>Escherichia coli</i> ," <i>Proc. Natl. Acad. Sci., USA</i> , 85:5879-5883 (August, 1988).
	C58	Izard, J.W. et al., "Signal peptides: exquisitely designed transport promoters," Molecular Microbiology, 13(5):765-773 (1994).
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	C61	Kang, A.S. et al., "Antibody redesign by chain shuffling from random combinatorial immunoglobulin libraries," <i>Proc. Natl. Acad. Sci.</i> , <i>USA</i> , 88(24):1120-11123 (1991).
	C62	Kang, A.S. et al., "Linkage of recognition and replication functions by assembling combinatorial antibody Fab libraries along phage surfaces," <i>Proc. Natl. Acad. Sci.</i> , <i>USA</i> , 88(10):4363-4366 (1991).
<u></u>	C63	Kettleborough, C.A. et al., "Humanization of a mouse antibody by CDR-grafting: the importance of framework residues on loop conformation," <i>Protein Engineering</i> , 4(7):773-783 (1991).
	C64	Kim, Y. et al., "Refinement of Eco RI Endonuclease Crystal Structure: A Revised Protein Chain Tracing," Science, 249:1307-1309 (1990).
	C65	Köhler, G. <i>et al.</i> , "Continuous cultures of fused cells secreting antibody of predefined specificity," <i>Nature</i> , 256:495-497 (August, 1975).

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 C67	Laforet, G.A. et al., "Functional Limits of Conformation, Hydrophobicity, and Steric Constraints in Prokaryotic Signal Peptide Cleavage Regions," J. Biological Chemistry, 266(2):1326-1334 (1991).
C68	Larrick, J.W. et al., "Rapid Cloning of Rearranged Immunoglobulin Genes from Human Hybridoma Cells Using Mixed Primers and the Polymerase Chain Reaction," <i>Biochem. Biophys. Res. Commun.</i> , 160(3):1250-1255 (May, 1989).
C69	Lesk, A. M. et al., "Elbow motion in the immunoglobulins involves a molecular ball-and-socket joint," <i>Nature</i> , 335:188-190 (September, 1988).
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 C71	Malamy, M.H. et al., "Purification and Crystallization of the Alkaline Phosphatase of Escherichia coli," Biochemistry, 3(12):1893-1897 (December, 1964).
C72	Marvin, D.A. et al., "Molecular Models and Structural Comparisons of Native and Mutant Class I Filamentous Bacteriophages Ff m(fd, f1, M13), If1 and IKe," J. Mol. Biol., 235:260-286 (1994).
 C73	McCafferty et al., "Phage Antibodies: Filamentous Phage Displaying Antibody Variable Domains," <i>Nature</i> , 348:552-554 (1990).
C74	McCracken, S. et al., "Functional and Structural Properties of Immobilized Subunits of Escherichia coli Alkaline Phosphatase," J. Biol. Chem., 255(6):2396-2404 (March, 1980).
. C75	Melamed, M.D. et al., "Requirements for the establishment of heterohybridomas secreting monoclonal human antibody to rhesus (D) blood group antigen," J. Immunological Methods, 104:245-251 (1987).
C76	Milstein F.R.S., C., "The Croonian Lecture, 1989 Antibodies: a paradigm for the biology of molecular recognition," <i>Proceedings of the Royal Society of London</i> , 239(1294):1-16 (1990)

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C77	Munro, S. et al., "An Hsp70-like Protein in the ER: Identity with the 78 kd Glucose-Regulated Protein and Immunoglobulin Heavy Chain Binding Protein," <i>Cell</i> , 46:291-300 (July, 1986).
 C78	Nagai, K. et al., "Synthesis and Sequence-Specific Proteolysis of Hybrid Proteins Produced in Escherichia coli," Methods Enzymology, 153:461-481 (1987).
C79	Neuberger, M.S. et al., "Recombinant antibodies possessing novel effector functions," <i>Nature</i> , 312:604-608 (1984).
C80	Newman, A.K. et al., "DNA Sequences of Structural Genes for Eco RI DNA Restriction and Modification Enzymes," J. Biological Chemistry, 256(5):2131-2139 (1981).
C81	Ohlson, S. et al., "Novel Approach to Affinity Chromatography Using "Weak" Monoclonal Antibodies," Anal. Biochem., 169:204-208 (1988).
C82	Oliver, D.B. et al., "Periplasm and Protein Secretion," in Escherichia coli and Salmonella typhimurium: cellular and molecular biology, F.C. Neidhart (ed.), American Society for Microbiology, Washington, pp. 56-69.
C84	Orlandi, R. et al., "Cloning immunoglobulin variable domains for expression by the polymerase chain reaction," <i>Proc. Natl. Acad. Sci., USA, 86</i> :3833-3837 (May, 1989).
C84	Osband, M.E. et al., "Problems in the investigational study and clinical use of cancer immunotherapy," <i>Immunology Today</i> , 11(6):193-195 (1990).
C85	Parmley et al., "Antibody-selectable Filamentous fd Phage Vectors: Affinity Purification of Target Genes," Gene, 73(2):305-318 (December, 1988).
C86	Parmley, S.F. et al., "Filamentous Fusion Phage Cloning Vectors for the Study of Epitopes and Design of Vaccines," Adv. Exp. Med. Biol., 251:215-218 (1989).
C87	Perelson, A.S., "Immune Network Theory," Immunol. Reviews, 110:5-36 (1989).
C88	Pratt, D. et al., "Conditional Lethal Mutants of the Small Filamentous Coliphage M13 II. Two Genes for Coat Proteins," Virology, 39:42-53 (1969).
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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